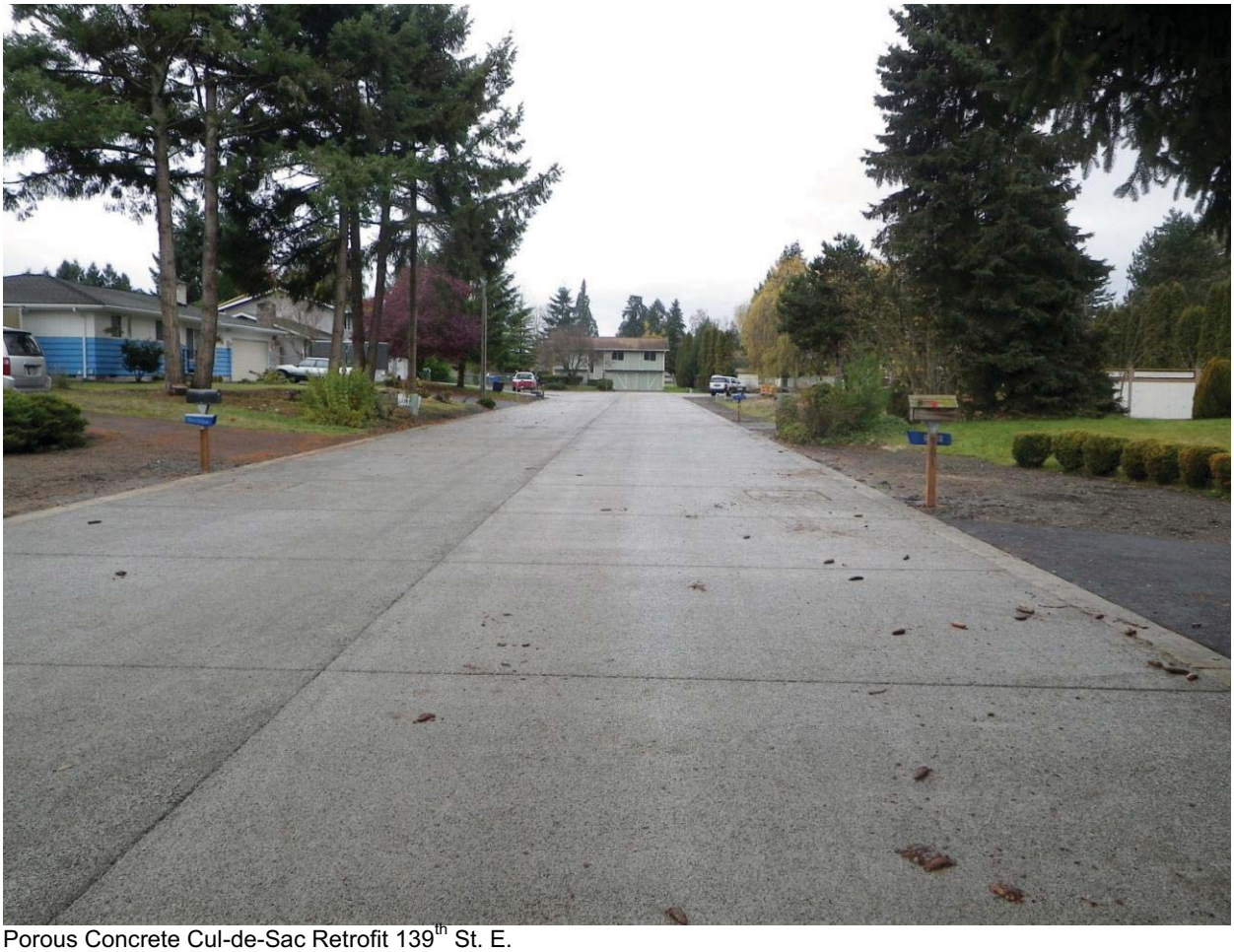
Appendix B
2012 Stormwater Management Program – March 2012



Porous Concrete Cul-de-Sac Retrofit 139th St. E.

2012 Stormwater Management Program – March 2012

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A Message from Pierce County.

Greetings.

Perhaps you have heard something to the effect that "*stormwater is the number one source of pollution*." Well, it's true. And it's the main reason Pierce County's streams and rivers barely rate a grade of "C."

This report is what we're going to do about it in Pierce County in 2012. It is Pierce County's 2012 Stormwater Management Program, which is required by the State's Municipal Stormwater Permit to Pierce County.

In this report, we lay out the County's planned actions that result in Pierce County fully meeting federal and state requirements for the protection of surface water resources from municipal stormwater.

As important as that is, these actions alone will not result in the attainment of healthy watersheds in Pierce County. This is because so much of the work that needs to be done, both little and large, is not part of the State's Stormwater Permit issued to Pierce County.

Supporting watershed councils, so citizens and businesses can participate in achieving economic and watershed health; organizing volunteer groups to remove invasive species or plant native species; or helping financially-strapped residents repair failing septic systems by providing low interest loans and grants, all are known and effective means of achieving healthy watersheds. But none of this is a part of the federal and state-required municipal stormwater permit program. Thus, even though they are things Pierce County does to improve water quality, they are not included in this report.

On the other hand, many of the project and programs contained in the Permit are so important in reducing stormwater impacts that without them, we stand no chance in achieving good water quality. Take for example development regulations that retain stormwater onsite and infiltrate into the ground. These can eliminate excess runoff that erode and pollute downstream neighbors.

Take, too, permit requirements to ensure stormwater facilities are properly installed, operating and maintained or Permit requirements that prevent illicit connections, discharges, and spills.

The NPDES Stormwater Permit also plays a key role in the management of County stormwater infrastructure and asset management. Pierce County has over 20,000 parts to its stormwater management system, operated by over a half dozen County departments. This represents millions of dollars of the public's investment. The Permit requires maintenance standards, inspections, and maintenance response to ensure this investment continues to pay dividends in clean water because it makes regular inspections and maintenance mandatory. The County has

blended these maintenance and operational requirements of the Permit with its strategic asset management system to maximize public benefit of each.

Similarly, it is critical that citizens and businesses have access to information and get the education they need to understand the problems of uncontrolled stormwater pollution such as inability to swim in lakes, the decline of fish, or the loss of water dependent wildlife. Did you know, for example, that in a recent public opinion poll, a large majority of Pierce County residents believe that stormwater is ***treated*** before it goes into our rivers, streams, wetlands, and Puget Sound? Not so! Yet, believing so makes it less important, less urgent to reduce stormwater impacts. The Permit does a good job in emphasizing outreach, education and technical assistance and these are key areas for the County's 2012 stormwater management program.

In 2012, we will use the stormwater inspections, technical assistance, maintenance and enforcement parts of our program enabled by the NPDES Stormwater Permit, our contractual relationship with the Tacoma/Pierce County Health Department, our professional partnership relationship with the Pierce Conservation District, and our volunteers who serve so unselfishly on our Watershed Councils to implement the ***Raise the Grade Initiative***. And we will also expand our ***Watershed Health Website*** we released in 2011 to improve public access to monitoring data and assessment results. In these ways, we seek to use the tools we have, whether Permit-required or locally developed, to work towards our goal of healthy watersheds. The reality is this is what it takes.

At the end of the day, though, no matter how well we do in meeting stormwater permit requirements know that regulation must be balanced with fixing outdated or failing stormwater facilities . This task is possible only with a major and significant contribution of investment by state and federal partners. The Puget Sound Partnership's estimate of retrofit needs in Pierce County alone is well over $1.5 billion. This is a staggering amount of money – particularly in the current economy. The reality is that without major funding assistance from the state and federal government, neither Pierce County nor any other local government can achieve the State Legislature's goal of achieving a healthy Puget Sound by addressing polluted stormwater runoff.

As you read this report, I ask you to keep this in mind: Pierce County works hard every day to help citizens, businesses, and various branches of County government reduce negative consequences of polluted and excessive stormwater. In doing so, we must also ensure Pierce County's legal obligations are met we must maximize our customer service, and we must get results. It's a challenge that we're up to and a privilege to provide.

Thank you for helping to protect Pierce County's surface water resources.

Dan D. Wrye

Water Quality Manager
Pierce County

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2012 STORMWATER MANAGEMENT PROGRAM

1. Introduction.

This document is **Pierce County's 2012 Stormwater Management Program (SWMP).**

Under a federal water quality permit issued to Pierce County by the Washington Department of Ecology, each year, Pierce County is to publish a Stormwater Program of activities for that year. This requirement is found in the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit (Permit). Other jurisdictions in Western Washington have the same requirement. These include Snohomish, King and Clark counties, and the cities of Tacoma and Seattle.

The requirement for an annual Stormwater Program is only one of over a hundred requirements in the permit, which is actually more of a set of regulations. The annual Stormwater Program helps people sort through the dozens of pages of a complicated permit document to better understand what specifically Pierce County is doing to help reduce negative impacts of stormwater on surface water resources.

2. Permit Coverage.

NPDES (Section 402 of the federal Clean Water Act) is a federal program that requires permits from United States Environmental Protection Agency, or, as in our case, a delegated state agency (Washington Department of Ecology) for the discharge of pollutants into the nation's water ways.

The NPDES Permit Program covers numerous types of discharges to waters of the United States, including process wastewater, construction sites runoff, and stormwater from industry and urbanized areas. Certain practices at specific sites are covered by various types of NPDES permits. By example, these include individual process wastewater permits (such as for the Chambers Creek Wastewater Treatment Plant); industrial stormwater permit (such as from the Narrows Airport); sand and gravel operational permits (such as for road maintenance shops and the Orting Quarry); construction activities for construction sites of one acre and larger in size; and the municipal stormwater permit for regulating runoff from lands and facilities owned or operated by the County. The NPDES Phase I Municipal Stormwater Permit covers discharges from the municipal separate storm sewer system (MS4) that Pierce County owns and operates. This Permit requires Pierce County to use stormwater best management practices (BMPs) to reduce the discharge of pollutants to the maximum extent practicable.

Pierce County has been under an NPDES Phase I Municipal Stormwater Permit issued by the Washington Department of Ecology (Ecology) since 1995. That Permit was extended by the State in 2000 and again in 2005. Ecology made major changes and additions to the permit in 2007 and issued a new Permit to Pierce County at that time. The State has proposed a new permit to go into effect in 2012/2013. Pierce County has published Annual Stormwater Programs since the original 1995 permit.

The Stormwater Permit (regulations) affects the County in a number of its roles.

1. As the local land use authority for the unincorporated area, the County must have appropriate codes, regulations, enforcement, and education capacity to reduce water-polluting practices and to increase or promote practices that protect water quality.

2. As a landowner and property manager, the County must ensure that its own practices meet regulatory standards.

3. As a local government, the County must implement a monitoring program that measures stormwater pollutants and the effectiveness of commonly used practices. The County must also assess the appropriateness of the stormwater management practices for the components of the Stormwater Program to determine their effectiveness, and identify necessary changes.

4. As a regional government, the County must work in coordination with other municipalities, and ensure the coordination and cooperation between the various departments within the County to achieve compliance with permit requirements.

Various agencies within the County government have been identified as having significant roles in implementing different sections of the 2012 Stormwater Program.

Pierce County's Public Works and Utilities Department, Surface Water Management Division (SWM), is charged with coordinating the Stormwater Program and annual reporting. Surface Water Management also manages the interjurisdictional coordination, public involvement, maintenance and source control inspections, illicit discharge response, manual equivalency, structural stormwater control, and public education portions of the stormwater program. Surface Water Management also has a significant role in the County's response to illicit discharges, training, data management and analysis, policy support and operations and maintenance of public stormwater ponds.

Other Pierce County departments manage and develop properties and facilities that are covered under the Permit. These divisions include Solid Waste Division, Roads Maintenance Division, Facilities Management Department, Ferries and Airports Division, and Parks and Recreation Department. Drainage facilities on any lands owned by these Pierce County departments must be mapped, designed, and maintained in a manner consistent with permit requirements, and Pierce County's source control practices for pollutant-generating activities must be used. The Permit also requires Stormwater Pollution Prevention Plans to be prepared for sixteen applicable facilities. The County's Planning and Land Services Department is responsible for ensuring the equivalent manual requirements are applied to new development and re-development sites through inspections and permitting. For the County, this action includes not just the Stormwater Management and Site Development Manual and Stormwater Pollution Prevention manuals but also related codes, which are applied to new development and re-development sites.

3. Organization of 2012 Stormwater Management Program.

The 2012 Stormwater Management Program is organized as follows:

- Goals for 2012 (not required by Permit)
- Legal Authority
- Mapping
- Intra-governmental Coordination
- Public Involvement
- Control of runoff from new development, redevelopment and construction sites
- Structural Stormwater Controls
- Source Control Program for Existing Development
- Illicit Connections and Illicit Discharges Detection and Elimination
- Operation and Maintenance Program
- Education and Outreach Program
- Monitoring Program
- Water Clean Up Plans (TMDLs)
- Raise the Grade (not required by Permit)
- Watershed Health Website (not required by Permit)

4. Goals for 2012.

The goals of Pierce County's 2012 Stormwater Management Program are:

- Continue full compliance with existing Permit
- Prepare for next Permit
- Work for continued federal and state funding

A. Continued full compliance with existing Permit.

A major goal of Pierce County's 2012 Stormwater Management Program is to remain in compliance with all of the 100-plus requirements of the NPDES Phase I Municipal Stormwater Permit so that negative stormwater impacts are reduced to Pierce County's water resources.

The current Permit issued in 2007 contains 12 years of scientific, technical, and legal advances in the realm of municipal stormwater since the first stormwater permit was issued in 1995. Not surprisingly, it came with a huge additional cost to County surface water management utility fee rate payers and tax payers.

In fact, a County Council Performance Audit Committee Report in 2008 concluded that the new permit added so many new and more responsibilities to the County that it would require major new resources to meet them all. Most of these new duties relate to operations and maintenance of County-owned stormwater facilities, inspections and technical assistance of private facilities, site development reviews and regulation, stormwater monitoring, and education and outreach. Late that year and continuing into 2009 and 2010, the local and regional economies decline in a financial crisis still lingering and adversely affecting citizens and business throughout the County, region and country as a whole. That economic decline resulted in corresponding reduction in the amount of resources needed to meet the Permit, mainly in the site development and related inspections work. Other efficiencies, interagency agreements, and a one-time grant from the Washington Legislature further reduced the number of staff needed to meet all the requirements in the Permit.

In April of 2010, the County Council acted to rectify the staffing needs and directed County administration to prioritize the Permit.

Thus, 2011 was the first year Pierce County was fully resourced to meet all its legal obligations under the permit and positioned the County to make major strides in protecting water resources from negative impacts of stormwater. Pierce County will continue and build upon these efforts in 2012.

Some of the areas of focus for 2012 are as follows:

- Complete Stormwater Management Facility Inspections (County-owned facilities) and update facility assessments.
- Continued to respond to illicit discharges and conduct compliance sweeps in the South Prairie Creek and Swan Creek watersheds.
- Complete all submitted site development reviews

- Complete all site development inspections and proceed with enforcement as needed.

- Conduct stormwater outreach and education workshops on yard care and landscaping; watershed health; site development and low impact development; and home based businesses and stormwater.

- Continue stormwater monitoring programs required by the 2007 permit.

- Publish the 2011 Watershed Health Report Card.

- Continue existing GPS/GIS mapping programs.

- Track, manage and document continued compliance with the County's Stormwater Permit.

- Manage stormwater facilities inspection and monitoring data base programs.

- Negotiate terms for cleanup plan for Clarks Creek Dissolved Oxygen TMDL.

- Conduct "Raise the Grade" targeted focus in Swan Creek, Minter Creek, Horn Creek, and Spanaway Lake watersheds.

- Begin construction on a vactor waste handling facility at the County's Central Maintenance Facility.

- Begin retrofit of 100 drywells in the Chamber/Clover Creek basin.

2. Prepare for next Permit.

The second major goal for the County's 2012 Stormwater Management Program is to prepare for changes to the Permit when it gets reissued. The existing Permit which was originally scheduled to expire February 15, 2012 has been extended by the Department of Ecology to August 1, 2013 when the next permit is scheduled to be issued.

NPDES permits are typically issued for up to five years in duration. Pierce County has encouraged the State to administratively extend the existing Permit conditions, most of which only became effective in the past few years. Administrative extensions of NPDES permits are widely used by states and EPA regions nationwide, including the State of Washington. The County reasoned that many of the new programs in the 2007 permit warranted an opportunity to mature before being changed to determine their effectiveness for reducing negative impacts from municipal stormwater. In addition, US EPA is planning to audit Phase I NPDES stormwater permit implementation and to propose new stormwater regulations in late 2012. Therefore, the County also reasoned that it made sense to wait to make sure the State regulations were consistent with national regulations.

None the less the Department of Ecology has announced their intent to issue the new Permit August 1, 2013. Pierce County's 2012 Stormwater Management Program will continue to work with the Department of Ecology and local and regional partners to help make the next new permit to an effective tool for reducing stormwater impacts.

3. Work for continued federal and state funding

Another major goal of Pierce County's 2012 Stormwater Management Program is to continue to secure state and federal funding to help pay for programs to reduce the negative effects of municipal stormwater. In 2010, the Puget Sound Partnership estimated costs of retrofitting existing stormwater facilities in Puget Sound to be between $3 Billion to $16 Billion (*Task 1: Urban Stormwater Runoff Preliminary Needs Assessment, Puget Sound Partnership)*. It also estimated the cost of implementing existing NPDES Municipal Stormwater Permits to be approximately $250 Million a year. Current funding levels are approximately $160 Million to $180 Million a year for implementation of existing NPDES Stormwater Permits, with the vast majority of that being funded by local governments, including Pierce County. Retrofit funding has been recently made available from the Washington State Legislature but there still exists a huge gap between needs and available funds.

Since 2009 Pierce County has worked to increase the federal and state proportionate share of addressing municipal stormwater to help fill these gaps for operational and retrofitting costs. In 2010, the County's efforts were successful in bring in over $1 Million in operational and $4 Million in retrofit grants to the County to help offset this cost of compliance. Pierce County will continue to work towards receiving additional federal and state funding in 2012 in to reduce the negative impacts of municipal stormwater on the State's water resources.

5. Legal authority.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have legal authority by way of codes and regulations to control discharges into and out of the County's stormwater drainage system, control and eliminate illicit discharges and spills, and to regulate site development equivalent to state standards.

In 2011, Pierce County adopted several technical amendments to its Illicit Stormwater Discharge Ordinance (PCC 11.05) to improve its effectiveness, streamline its processes, and to make it more consistent with other existing County enforcement laws. No changes are anticipated in 2012.

6. Mapping.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to map and document its drainage system and interconnections with other municipalities, in particular, paying attention on an ongoing basis to outfalls and other system components. In 2012, Pierce County will continue its mapping on an ongoing basis. Additionally, Pierce County has established a "GIS Team" whose function is to correct drainage feature location errors found by County water quality inspectors and to verify newly-permitted systems. In 2011 the County developed a

digital link within the Public GIS showing watershed health of Pierce County. This link provides access through GIS to water quality data and results of management strategies throughout the County. Enhancements to the Watershed Health Portal are planned for 2012.

7. Inter- and intra-governmental coordination.

The NPDES Phase I Municipal Stormwater Permit requires coordination mechanisms among Pierce County departments to eliminate barriers to compliance with the Permit. The Permit has many requirements that apply to numerous County departments, most of which may not have stormwater management as a core business and may think differently about how the requirement applies to them.

The NPDES Permit also requires coordination mechanisms between Pierce County and other local governments responsible for stormwater management. This requirement is aimed at clarifying roles and responsibilities for the control of pollutants between interconnected drainage systems and for actions on discharges to shared watersheds.

In 2012, Pierce County will continue to implement its 2008 Executive Order that identifies Pierce County's Surface Water Management as the lead agency for the County stormwater management and related internal coordination. Additionally, Pierce County will continue its internal technical assistance function for NPDES permit compliance by coordinating and conducting inspections of County-owned facilities, conducting staff trainings on NPDES stormwater, and by conducting periodic department-level director briefings on County compliance activities.

Pierce County has inter-agency memoranda of understandings with nine jurisdictions it prepared and solicited in 2010 clarifying expectations of roles concerning interconnections of drainage systems. In 2012, the County will continue to monitor and implement those agreements.

For watershed-based coordination, Pierce County will continue to provide staff and financial support to the Puyallup River, Chambers-Clover, and KGI watershed councils and participate in the Nisqually River Council, all of which have significant municipal and affected stakeholders' participation.

Pierce County will also continue to participate on the Phase I Permit Coordinators Committee; the South Sound NPDES Stormwater Permit Coordinators' Committee; the Puget Sound Partnership's Ecosystem Coordination Board; the Alliance for a Health South Sound; the municipal caucus of the Stormwater Workgroup; and other stakeholder and municipal organizations seeking a rational approach to the reissuance of the next NPDES Phase I Municipal Stormwater Permit.

8. Public involvement.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to provide public involvement opportunities in this Program and other Permit-required submittals.

In 2012, Pierce County has given, and will continue to give, specific and detailed briefings on its water quality workplan for 2012 to the four watershed councils covering all of Pierce County and to the County's Storm and Surface Water Advisory Board (SWAB). It has also posted this Program on its webpage and has invited public commentary on managing municipal stormwater in Pierce County. Pierce County has furthered public involvement on its workplan by inviting and scoping several public initiatives with watershed council participation, including Home Owners' Associations workshops on maintaining private stormwater systems and outreach activities including native plant landscaping.

9. Control of runoff from new development, redevelopment and construction sites.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to use drainage design and source control rules equal to those in Ecology's 2005 Stormwater Management Manual for Western Washington and to meet standards for staff training and inspections. Under the Permit, all County development projects must comply with the County's Site Development Manual which has been approved by the State as "equivalent" to the Ecology manual. The Permit also requires Pierce County's site development program to allow for Low Impact Development actions and techniques.

In 2012, Pierce County will continue its site plan reviews and require site plans to meet the design standards contained in its approved Site Development Manual. Because the number of site developments is strongly linked to the health of the local and regional economy, Pierce County can only estimate that site plan reviews for 2012 will be in the 2000 to 2500 range. Similarly, the number of site inspections and enforcement actions are tied to economic activity and can only be roughly estimated. That said, we assume the number of site inspections of sites with high sediment transport potential to be between 50 and 200; the number of permitted development sites to be between 2500 and 3500; the number of development site inspections to be between 2500 and 3000 and its associated number of enforcement actions between 120 and 200; and the number of inspections of completed construction sites to be between 1500 and 1800 and its associated enforcement actions between 500 and 700.

Also in 2012, Pierce County will conduct several training modules for site development reviewers, inspectors, and development community members and will continue to participate and support site development activities that use Low Impact Development (LID). Pierce County will also begin design on public infrastructure to retrofit and construct LID in the Clover Creek Basin, at Spanaway Lake Park and will continue to participate on the Department of Ecology's LID Implementation and Policy Committees it convened in 2009.

10. Structural Stormwater Controls.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to construct structural stormwater controls to prevent or reduce impacts to waters of the state.

In 2012, Pierce County will continue to implement its Six Year Capital Facilities Plan, modified in 2010. This six-year plan includes projects aimed at reducing stormwater impacts from public

infrastructure, mitigating effects from increased flows, and for improving instream beneficial uses. In total, the 2012 Capital Facilities Plan is over $6.3 Million and involves property acquisition, scoping, design, permit attainment, and/or construction of the following projects: WaTauGa Ave. S Conveyance; Clear Creek Restoration; Clarks Creek Restoration; Lake Sylvia Sediment Control; Lower White Flood Plain Acquisition; Mud Mountain Flood Plain Acquisition; Upper Nisqually Flood Plain Acquisition; Upper Carbon Flood Plain Acquisition; Key Peninsula/Islands Flood Plain Acquisition; Lower Carbon Flood Plain Acquisition; Ball Creek Culvert Replacement/ Restoration; Golden Given Culvert Replacement; Jansky Road Channel Stabilization; North Fork Muck Creek Habitat Restoration; Meridian Culvert Replacement; McCormick Stream Restoration; McCutcheon Road Bridge Replacement; South Fork Muck Creek Restoration; and 139th Street East Cul-de-sac Improvements.

In 2010 and 2011 Pierce County received funding through Washington Department of Ecology Grants that will enable it to construct additional projects aimed at reducing stormwater impacts from public infrastructure, mitigating effects from increased flows, and for improving instream beneficial uses. In total these projects will account for approximately 3.4 Million in additional investment in scoping, design, permit attainment, and construction of the following projects: CMF Vactor Waste Station; Chambers/Clover Drywell Retrofits; Spanaway Park LID Retrofits; and the Spanaway Creek LID Retrofit. In addition, Pierce County has applied for retrofit funding for Rody Creek, Bressman Forest, Spanaway Park, Narrows Airport and groundwater pollutant reduction projects for a combined total of four million dollars. As of this writing all five of these projects are in the State's and the Legislature is expected to fund them when it passes the budget in winter/spring 2012.

Also in 2012, Pierce County will continue to seek state and federal grants for retrofitting projects and will work to improve its retrofit screening protocols. It will also support Washington Department of Transportation's retrofit needs prioritization process for identifying retrofit needs from DOT facilities within Pierce County.

11. Source control program for existing development.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to reduce pollutants in runoff from existing development by applying operational and structural sources to control pollution.

In 2012, Pierce County will conduct over 200 source control inspections of "potential pollutant-generating sources" (commercial, large developments). These inspections will focus on implementing best management practices aimed at separating potential pollutant sources from exposure to stormwater water. In addition, Pierce County will conduct workshops for Home Owners' Associations that include best management practices for source control and maintenance BMP's. Finally, in 2012, Pierce County will conduct approximately 1,500 additional inspections of existing development, focusing on operational and maintenance best practices of private and public stormwater management systems, but also using these inspections to provide source control technical assistance as needed.

12. Illicit connections and illicit discharges detection and elimination (IDDE).

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to detect, remove and prevent illicit connections and illicit discharges, including spills.

Since 2010, Pierce County substantially increased its capacity to address these needs. In 2010, two new IDDE Specialists were established at the County to be dedicated to this function. In 2011, reassigned a monitoring position to IDDE and enhanced its existing Illicit Stormwater Discharge Ordinance (PCC 11.05) to improve its effectiveness and efficiency and to make it more consistent with other County enforcement codes. Additionally, the County deployed a new standard operating procedure that governs referrals from water quality inspectors of recalcitrant and persistent illicit discharges. Also in 2011, the County updated and converted its water quality complaint system to a Request for Action data base to better track and evaluate progress in water quality responses. Finally the County also updated its spill response procedure in 2011 to better clarify roles and responsibilities and conducted spill response training.

In 2012 Pierce County will work to strategically deploy its IDDE resources where appropriate in support of the development of total maximum daily loads in the Clarks Creek, South Prairie Creek and Puyallup Watersheds and the County's "Raise the Grade" Initiative in the Minter creek, Spanaway Lake, Swan Creek and Horn Creek watersheds. Pierce County estimates it will conduct approximately 80 IDDE investigations in 2012.

13. Operation and maintenance program.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to regulate maintenance activities and to conduct maintenance activities to prevent and reduce stormwater impacts. This program applies to the County's oversight of private development and oversight of County facilities.

In 2012, Pierce County will conduct approximately 500 maintenance inspections of County-owned stormwater management facilities. Pierce County will also update facility assessments of Facility Management Department, Ferries and Airports Division, SWM Maintenance Section, Parks and Recreation Department, and the Solid Waste Division. These assessments determine priorities and timing of maintenance and retrofit needs at County-owned facilities.

In 2012, Pierce County will conduct over 1,000 maintenance and operations inspections of privately-owned stormwater management facilities. Pierce County will also update Stormwater Pollution Prevention Plans for all facilities required to have them under the Permit in 2012. And the County will hold another round of staff training for maintenance and operations staff in 2012 as it did in 2010 and 2011.

In 2011 Pierce County completed the inspections of approximately 20,000 stormwater catchbasins within the roads right-of way both to identify facilities needing maintenance and to provide baseline data for the drainage features asset management system. Pierce County uses the circuit based approach method for our NPDES inspections. This approach is founded upon the

fundamental principles of asset management and years of practical experience maintaining and operating public infrastructure. Pierce County has modified and expanded baseline asset management criteria to meet permit requirements in order to achieve and sustain compliance. The inspection includes verifying the attribute information for each feature is correct and make changes where needed as well as getting an operation and structural condition of the feature. In 2012 Pierce County will inspect catchbasins using a circuit based approach to identify systems needing maintenance and add to the data set for this facility type. The goal of our inspection and maintenance program is to insure we continue to fully comply with NPDES stormwater permit requirements and maintain our systems for maximum water quality benefit at the most cost effective schedule.

14. Education and outreach program.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the County.

In 2012, Pierce County will continue to educate County Council Members and other elected officials as to the benefits, liabilities, and costs of implementing the NPDES Phase I Municipal Stormwater Permit. This education will be associated with permit reissuance concerns and annual budget development and will be in the form of briefings, and staff reports. Also in 2012, Pierce County will continue to sponsor and participate in public outreach campaigns to provide outreach on yard care techniques, pesticides and fertilizers, mobile businesses, and Low Impact Development. Pierce County will also continue a major storm drain marking campaign initiated last year in cooperation with watershed councils in 2012. These campaigns will involve printed materials and public workshops. Pierce County will also update and prepare for another round of site development plan outreach workshops with the development community and site plan reviewers as the targeted audience. That workshop was developed in 2011 and will be conducted in early 2012.

Pierce County will also continue implement of its Surface Water Management Public Education and Outreach Plan in 2012 that contains many additional outreach initiatives such as shellfish water quality, public events, publications, and displays.

15. Water cleanup plans (Total Maximum Daily Loads).

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to implement completed Total Maximum Daily Loads (TMDLs). Under the current Permit, the only completed TMDL is the Fecal Coliform TMDL for South Prairie Creek. Two other TMDLs are currently underway that also benefit from Pierce County involvement and the results of which are likely to be included in the next reissuance of the Permit.

In 2012, Pierce County will continue to review and inspect site development activities in the South Prairie Creek area as included in the Permit. It will also continue to work with Department of Ecology, Tacoma/Pierce County Health Department, and Pierce Conservation District in tracking and evaluating progress towards water quality standards. Pierce County will

provide continue to fund its Onsite Septic Repair Grant and Loan Program as a source for funding repairs of failing septic systems in the watershed. Finally, in 2012, Pierce County will investigate areas as appropriate for bacterial sources impacting the County's drainage system.

Also in 2012, Pierce County will continue to participate in the development of dissolved oxygen TMDL for Clarks Creek to ensure the County is credited for stormwater retrofits conducted by the County in the watershed. Pierce County will also continue to track the development of a Fecal Coliform TMDL for the Puyallup River Watershed and will seek to obtain WLA credit, if any is necessary, for work within the capacity of the County to conduct, such as watershed council support, outreach, increased inspections, and IDDE services.

Finally, although not required, Pierce County will conduct an IDDE sweep in the Swan Creek Basin. Even though this stream's TMDL does not require this attention until 2013 and beyond, Pierce County has unilaterally selected Swan Creek as one of our local "Raise the Grade" waterbodies for 2012 (see below, section 17). As a result, we will focus on Swan Creek in 2012, ahead of the State's timeline.

16. Monitoring Program.

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to implement a stormwater monitoring program to characterize stormwater; targeted stormwater management program effectiveness; evaluate BMP effectiveness and flow reduction.

In 2011, Pierce County completed Quality Assurance Project Plans for program effectiveness, flow reduction, and BMP effectiveness monitoring. In 2012 Pierce County will continue to take the required samples from each rain event and have them sent to laboratories for analysis. The County will complete full water year cycle monitoring for these and for stormwater characterization.

Pierce County hired two additional monitoring staff in 2010 to support these monitoring efforts, one with specialty in GPS and GIS, and the other, a water quality scientist. Those additional resources are specifically targeted to spatial analysis of permit-required monitoring and analytical and laboratory controls of permit-required stormwater monitoring data.

In 2012, Pierce County will continue stormwater characterization monitoring at Canyon Road Outfall, Lake Sylvia Outfall, and Collinswood Outfall. Pierce County will continue BMP effectiveness monitoring at Canyon Road, Sunrise Pond, Crimson Pond, and Magnolia Grove sites. Pierce County will continue flow reduction monitoring at Sprinker Recreation Center low impact development. Finally, in 2012, Pierce County will continue program effectiveness monitoring in two studies: affects of deicing salts on water quality from roads and the relationship of biologic integrity index and fish carcass placement.

Additionally, Pierce County will continue to support and participate on the Department of Ecology and Puget Sound Partnership's Stormwater Monitoring Workgroup as a Municipal Caucus member. That Workgroup was established by the State to develop a regional stormwater monitoring program for Puget Sound that would be integrated in the 2013 reissuance of the Municipal Stormwater NPDES Phase I permits. Pierce County has hired Brown and Caldwell

Associates to provide technical services to the Municipal Caucus to assist in the development of status and trends, source identification, and BMP effectiveness monitoring for inclusion in the next iteration of the stormwater permit.

Finally, throughout 2012, Pierce County will continue to maintain 65 water quality index sites for monthly monitoring, 12 flow sites, numerous ground water wells, 16 weather stations, shellfish districts monitoring, benthic index of biological integrity (BIBI), and salmon recovery adaptive management monitoring. Pierce County will also publish its annual Water Quality Report for 2011.

17. Raise the Grade.

Although not required by the Permit. Pierce County has established a system of quantifying stream health and facility compliance and is using that system now to benchmark watershed health status and improvements.

In 2012, Pierce County Public Works and Utilities, Surface Water Management (SWM), will initiate an effort aimed at improving the surface water quality of Minter Creek, Horn Creek Swan Creek and Spanaway Lake, using NPDES Stormwater Permit and other local actions

Since 2008, Surface Water Management (SWM) has been tracking and reporting the water quality status of Pierce County waterbodies in an annual Watershed Health Report Card. Streams and lakes are graded on a scale of "F" (failing) to "A" (excellent) based on an index of water quality and biological indicators. Monitoring data and the Report Card are available on the web at www.piercecountywa.org/watershedhealthdata.

Also, SWM routinely inspects stormwater facilities for potential sources of pollution and rates their status of compliance with stormwater requirements. Facilities are graded on a scale of "1" (significant noncompliance) to "5" (exceeds requirements).

The goal of the "Raise the Grade" initiative is to improve water quality in Minter Creek, Horn Creek, Swan Creek and Spanaway Lake so that their existing grades and the compliance ratings of stormwater management facilities contributing pollutants to those waterbodies, are improved ("raised").

In October 2011, SWM analyzed water quality and watershed health data from each of four watersheds in the County (Puyallup, Chambers/Clover, KGI, and Nisqually). A water body was selected from each watershed based on its likelihood for improvement. Criteria considered included: water quality status and trends, pollutant source identification, placement in the watershed, and stakeholder interest.

2010 grades in Pierce County's Annual Report Card for the Raise the Grade waterbodies will be used as the baseline for evaluating progress:

- Minter Creek (KGI Watershed) is currently graded a C
- Horn Creek (Nisqually Watershed) is currently graded a C-

- Swan Creek (Puyallup Watershed) is currently graded a D+
- Spanaway Lake (Chambers/Clover Watershed) is currently graded a C+

18. Watershed Health Website.

Although not required by the Permit, Pierce County has deployed a web-based portal on watershed health.

In 2011, the Pierce County Public Works and Utilities Department released its Watershed Health Website (www.piercecountywa.org/watershedhealthdata/). This website allows citizens to access information regarding the quality of Pierce County's local watersheds and streams. You can view monitoring data using the interactive map that shows the location of streams and links to results collected since the year 2000. The website is updated automatically as new data is collected.

Features of the website include:

- An interactive map provided by Pierce County Geographic Information Systems (GIS).
- The ability to query the map, identifying streams and providing access to monitoring data.
- The location of streams monitored by Pierce County.
- A link to water quality summaries for each stream monitored by Pierce County dating back to 2000.
- A link to the Puget Sound Stream Benthos database. This on-line database houses the macro-invertebrate (bugs living in streams) scores for streams throughout the Puget Sound Region.
- The "grade" of some streams, from the annual Pierce County Surface Water Health Report Card.
- A link to download the annual Pierce County Surface Water Health Report Card.
- Downloadable (in Excel of PDF format) monthly water quality data collected for each stream, including: Dissolved Oxygen (mg/L), Ph, Fecal Coliform (FCU/100 ml), Nitrogen (TKN mg/L), Total Suspended Solids (mg/L), Conductivity, Total Phosphorus (mg/L), Turbidity, and Temperature (°Celsius).

Pierce County intends to increase the functionality of the website in 2012 by incorporating access to other forms of watershed health monitoring data.